



State of Utah

Department of
Environmental Quality

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Executive Director

DIVISION OF AIR QUALITY
Richard W. Sprott
Director

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Lieutenant Governor

DAQE-IN2724003-06

September 14, 2006

Jon Adams
General Manager
Salt Lake City Department of Public Utilities
Salt Lake City Water Reclamation Facility
1367 West 2300 North
Salt Lake City, Utah 84116

Dear Mr. Adams:

Re: Intent to Approve: Modification to DAQE-AN2724002-04 to Replace Two Existing Boilers with One New Boiler and Add One Emergency Generator, CDS B; NA; MAINT; HAPS
Project Code: N2724-003

The attached document is the Intent to Approve (ITA) for the above-referenced project. ITAs are subject to public review. Any comments received shall be considered before an Approval Order is issued.

Future correspondence on this Intent to Approve should include the engineer's name as well as the DAQE number as shown on the upper right-hand corner of this letter. Please direct any technical questions you may have on this project to Ms. Milka M. Radulovic. She may be reached at (801) 536-4232.

Sincerely,

Tim Blanchard, Acting Manager
Minor New Source Review Section

TB:MR:kw

cc: Salt Lake Valley Health Department

Mike Owens, EPA Region VIII

STATE OF UTAH

Department of Environmental Quality

Division of Air Quality

**INTENT TO APPROVE: Modification to
DAQE-AN2724002-04 to Replace Two
Existing Boilers with one New Boiler
and Add One Emergency Generator**

**Prepared By: Milka M. Radulovic, Engineer
(801) 536-4232
Email: milkar@utah.gov**

INTENT TO APPROVE NUMBER

DAQE-IN2724003-06

Date: September 14, 2006

Salt Lake City Department of Public Utilities

**Source Contact
Jon Adams
(801) 799-4001**

**Richard W. Sprott
Executive Secretary
Utah Air Quality Board**

Abstract

Salt Lake City Water Reclamation Facility (Company) is a publicly owned treatment works (POTW). The Company has submitted a Notice of Intent to modify their current approval order by replacing two existing boilers, each rated at 1.35×10^6 Btu/hr, with one new boiler rated at up to 4.4×10^6 Btu/hr. The existing and the new boiler use digester or natural gas as a fuel. The Company is also proposing to add one diesel fired emergency generator rated at up to 2000 kW.

This source is located in Salt Lake City, Salt Lake County, which is a Non-attainment area of the National Ambient Air Quality Standards (NAAQS) for PM_{10} and SO_2 , and is a Maintenance area for CO and Ozone.

New Source Performance Standards (NSPS) regulations do not apply to this source. The entire source will have potential to emit up to 7.0 tons per year (ton/yr) of all HAPs combined and it is not co-located with a major source of HAPs. Therefore National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines Subpart ZZZZ and Subpart VVV of 40 CFR Part 63 for POTW, do not apply to this source. Also, Title V of the 1990 Clean Air Act does not apply to this source.

As a result of this modification there will be, in tons per year, increase in emissions as follows: PM_{10} = 0.32, NO_x = 15.41, SO_2 = 5.52, CO = 2.9 and VOC = 0.45.

The changes in emissions will result in the following, in tons per year, potential to emit for the entire source: PM_{10} = 0.86, NO_x = 38.94, SO_2 = 5.75, CO = 41.97, VOC = 14.33, HAPs = 7 (Mainly Phenol, Benzene, Toluene and Xylene).

The Notice of Intent (NOI) for the above-referenced project has been evaluated and has been found to be consistent with the requirements of the Utah Administrative Code Rule 307 (UAC R307). Air pollution producing sources and/or their air control facilities may not be constructed, installed, established, or modified prior to the issuance of an Approval Order (AO) by the Executive Secretary of the Utah Air Quality Board.

A 30-day public comment period will be held in accordance with UAC R307-401-7. A notice of intent to approve will be published in the Salt Lake Tribune and Deseret News on September 18, 2006. During the public comment period the proposal and the evaluation of its impact on air quality will be available for both you and the public to review and comment. If anyone so requests a public hearing it will be held in accordance with UAC R307-401-7. The hearing will be held as close as practicable to the location of the source. Any comments received during the public comment period and the hearing will be evaluated.

Please review the proposed AO conditions during this period and make any comments you may have. The proposed conditions of the AO may be changed as a result of the comments received. Unless changed, the AO will be based upon the following conditions:

General Conditions:

1. This Approval Order (AO) applies to the following company:

Site Office

Salt Lake City Department of Public Utilities
Water Reclamation Facility
1365 West 2300 North
Salt Lake City, Utah 84116
Phone Number (801) 799-4001
Fax Number (801) 799-4075

The equipment listed in this AO shall be operated at the following location:

1365 West 2300 North, Salt Lake City

Universal Transverse Mercator (UTM) Coordinate System: UTM Datum NAD27
4,518,034.kilometers Northing, 421,477.5 kilometers Easting, Zone 12

2. All definitions, terms, abbreviations, and references used in this AO conform to those used in the Utah Administrative Code (UAC) Rule 307 (R307) and Title 40 of the Code of Federal Regulations (40 CFR). Unless noted otherwise, references cited in these AO conditions refer to those rules.
3. The limits set forth in this AO shall not be exceeded without prior approval in accordance with R307-401.
4. Modifications to the equipment or processes approved by this AO that could affect the emissions covered by this AO must be reviewed and approved in accordance with R307-401.
5. All records referenced in this AO which are required to be kept by the owner/operator, shall be made available to the Executive Secretary or Executive Secretary's representative upon request. Records shall be kept for the following minimum periods:
 - A. Emission inventories Five years from the due date of each emission statement or until the next inventory is due, whichever is longer.
 - B. All other records Two years
6. Salt Lake City Water Reclamation Facility shall install and operate the 4.4×10^6 Btu/hr boiler and 2000 kW diesel fired emergency generator and shall conduct its operations of the Water Reclamation Facility in accordance with the terms and conditions of this AO, which was written pursuant to Salt Lake City Water Reclamation Facility's Notice of Intent submitted to the Division of Air Quality (DAQ) on August 25, 2006 and additional information submitted to the DAQ on September 6, 2006.
7. This AO shall replace the AO (DAQE-AN2724002-04) dated December 23, 2004.

8. The approved installations shall consist of the following equipment or equivalent*:
 - A. Two (2) Waukesha (Model L5790GLD) turbocharged and inter-cooled, twelve cylinders, lean burn four-cycle, engine-generator sets, number 7.A.1 & 7.A.2, each rated at 1040 bhp, fueled by the digester or natural gas
 - B. One (1) Emergency Generator (Installed in 1980)

Fuel Type: Diesel,
Electrical Output: 800 kW
 - C. One (1) Emergency Generator (Installed in 1980)

Fuel Type: Diesel,
Electrical Output: 820 kW
 - D. Natural Gas Fired Miscellaneous Heaters

Fuel Type: Natural Gas
Combined Heating Capacity: 5.7×10^6 Btu/hr
 - E. Two (2) Digester Gas Flares, each with 500 scfm flow rate
 - F. One (1) Boiler

Fuel Type: Natural Gas and/or Digester Gas
Heating Capacity: 4.4×10^6 Btu/hr
 - G. One (1) Emergency Generator

Fuel Type: Diesel,
Electrical Output: 2000 kW

* Equivalency shall be determined by the Executive Secretary.

9. Salt Lake City Water Reclamation Facility shall notify the Executive Secretary in writing when the installation of the equipment listed in Condition #8.F. and #8.G. has been completed and is operational, as an initial compliance inspection is required. To insure proper credit when notifying the Executive Secretary, send your correspondence to the Executive Secretary, attn: Compliance Section.

If the construction and/or installation has not been completed within eighteen months from the date of this AO, the Executive Secretary shall be notified in writing on the status of the construction and/or installation. At that time, the Executive Secretary shall require documentation of the continuous construction and/or installation of the operation and may revoke the AO in accordance with R307-401-18.

Limitations and Tests Procedures

10. Visible emissions from the following emission points shall not exceed the following values:

- A. All natural gas or digester gas combustion exhausts - 10% opacity
- B. All diesel engines exhausts - 20% opacity
- C. All other points - 20% opacity

Opacity observations of emissions from stationary sources shall be conducted according to 40 CFR 60, Appendix A, Method 9.

11. Emissions to the atmosphere at all times from the indicated emission point(s) shall not exceed the following rates and concentrations:

Source: Waukesha VHP5790GLD Engines, Number 7.A.1 & 7.A.2

<u>Pollutant</u>	<u>g/bhp-hr</u>
CO.....	2.8
NO _x	1.5

12. Stack testing to show compliance with the emission limitations stated in the above condition shall be performed as specified below:

A.	<u>Emissions Point</u>	<u>Pollutant</u>	<u>Testing Status</u>	<u>Test Frequency</u>
	(Engine 7.A.1 & 7.A.2)	CO	*,	#
		NO _x	*,	#

Testing Status

- * Initial compliance testing was performed to establish the emission factors values. If an existing source is modified, a compliance test is required on the modified emission point that has an emission rate limit.

- # Testing, using portable analyzer, is required any time a new baseline (air to fuel ratio) is set due to annual maintenance and repairs.

B. Notification

The Executive Secretary shall be notified at least 30 days prior to conducting any required emission testing. A source test protocol shall be submitted to DAQ when the testing notification is submitted to the Executive Secretary.

The source test protocol shall be approved by the Executive Secretary prior to performing the tests. The source test protocol shall outline the proposed tests methodologies, stack to be tested, and procedures to be used. A pretest conference shall be held, if directed by the Executive Secretary.

C. Sample Location

The emission point shall be designed to conform to the requirements of 40 CFR 60, Appendix A, Method 1A, or other methods as approved by the Executive Secretary. An Occupational Safety and Health Administration (OSHA) or Mine Safety and Health Administration (MSHA) approved access shall be provided to the test location.

D. Volumetric Flow Rate

40 CFR 60, Appendix A, Method 2 or other testing methods approved by the Executive Secretary.

E. Nitrogen Oxides (NO_x)

40 CFR 60, Appendix A, Method 7, 7A, 7B, 7C, 7D, 7E, or other testing methods approved by the Executive Secretary.

F. Carbon Monoxide (CO)

40 CFR 60, Appendix A, Method 10, or other testing methods approved by the Executive Secretary.

G. Calculations

To determine mass emission rates (lb/hr, etc.) the pollutant concentration as determined by the appropriate methods above shall be multiplied by the volumetric flow rate and any necessary conversion factors determined by the Executive Secretary, to give the results in the specified units of the emission limitation.

H. New Source Operation

For a new source/emission point, the production rate during all compliance testing shall be no less than 90% of the production rate listed in this AO. If the maximum AO allowable production rate has not been achieved at the time of the test, the following procedure shall be followed:

- 1) Testing shall be at no less than 90% of the production rate achieved to date.
- 2) If the test is passed, the new maximum allowable production rate shall be 110% of the tested achieved rate, but not more than the maximum

allowable production rate. This new allowable maximum production rate shall remain in effect until successfully tested at a higher rate.

- 3) The owner/operator shall request a higher production rate when necessary. Testing at no less than 90% of the higher rate shall be conducted. A new maximum production rate (110% of the new rate) will then be allowed if the test is successful. This process may be repeated until the maximum AO production rate is achieved.

I. Existing Source Operation

For an existing source/emission point, the production rate during all compliance testing shall be no less than 90% of the maximum production achieved in the previous three (3) years.

Fuels

13. The owner/operator shall use:
 - A. Digester gas as a primary fuel and natural gas as backup fuel in the Waukesha engines and the boiler,
 - B. Natural gas as a fuel in the comfort heaters, and
 - C. #2 diesel fuel oil or better in the emergency generators.

14. The sulfur content of any fuel oil or diesel burned shall not exceed:

0.5 percent by weight for diesel fuels consumed in all equipment.

The sulfur content shall be determined by ASTM Method D-4294-89 or approved equivalent. Certification of fuel shall be either by Salt Lake City Department of Public Utilities' own testing or test reports from the fuel marketer.

Records & Miscellaneous

15. At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any equipment approved under this Approval Order, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on the information available to the Executive Secretary which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. All maintenance performed on the equipment authorized by this AO shall be recorded.
16. The owner/operator shall comply with R307-150 Series. Inventories, Testing and Monitoring.

17. The owner/operator shall comply with R307-107. General Requirements: Unavoidable Breakdowns.

The Executive Secretary shall be notified in writing if the company is sold or changes its name.

This AO in no way releases the owner or operator from any liability for compliance with all other applicable federal, state, and local regulations including R307.

A copy of the rules, regulations and/or attachments addressed in this AO may be obtained by contacting the Division of Air Quality. The Utah Administrative Code R307 rules used by DAQ, the Notice of Intent (NOI) guide, and other air quality documents and forms may also be obtained on the Internet at the following web site:

<http://www.airquality.utah.gov/>

The annual emissions estimations below include point source and do not include point source, fugitive emissions, fugitive dust, road dust, tail pipe emissions, grandfathered emissions etc. These emissions are for the purpose of determining the applicability of Prevention of Significant Deterioration, non-attainment area, Maintenance area, and Title V source requirements of the R307. They are not to be used for determining compliance.

The Potential To Emit (PTE) emissions for the entire plant are currently calculated at the following values:

	<u>Pollutant</u>	<u>Tons/yr</u>
A.	PM ₁₀	0.86
B.	SO ₂	5.75
C.	NO _x	38.94
D.	CO	41.97
E.	VOC	14.33
F.	HAPs	
	Phenol	1.70
	Toluene	1.80
	Benzene	1.10
	Xylene.....	1.10
	Miscellaneous HAPs.....	1.30
	Total HAPs	7.00

The Division of Air Quality is authorized to charge a fee for reimbursement of the actual costs incurred in the issuance of an AO. An invoice will follow upon issuance of the final Approval Order.

Sincerely,

Tim Blanchard, Acting Manager
Minor New Source Review Section